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MAINTENANCE PERFORMANCE SYSTEM (ORGANIZATIONAL) SUPERVISOR'S OJT GUIDE

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The purpose of this effort is to develop the Maintenance Performance System-Organizational which is an integrated system to measure maintenance performance, diagnose problems, take corrective actions and provide training. This report is designed to provide supervisors with knowledge of procedures and principles needed to conduct effective OJT. The procedures and principles described in the guide are based primarily on research findings from a review of the literature on learning and cognition.

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SUPERVISOR'S OJT GUIDE DESIGN BACKGROUND

AUDIENCE AND READING LEVEL

The guide was written for the first-line supervisor. Ease of reading was enhanced by using short sentences and common words. Abstract language was avoided. Concrete images were used, where possible, to convey concepts. The guide presents a series of explicit procedures that should be easy to follow; supervisor decision-making is kept to a minimum.

GUIDE STRUCTURE, STRATEGY, AND RELEVANT COGNITIVE/TRAINING PRINCIPLES

The guide is divided into four parts:

- Introduction
- Prepare for OJT
- Conduct OJT
- Follow up on OJT

The background for development of each part is described below.

Introduction - Overview

The Introduction defines OJT, identifies incentives for conducting it, points out drawbacks of OJE (on-the-job-experience), and provides an OJT overview in terms of the "who," "what," "where," "when," and "how" of OJT. It defines OJT as a combination of procedures and principles. It introduces and provides an overview of the three phases of OJT procedures: Prepare, Conduct, and Follow Up. It introduces the notion of training principles, and points out that some are contained in the training procedures, and more general principles are presented as "training tips."

Prepare for OJT - Overview

Objectives of the Prepare for OJT section are to:

- Sensitize the supervisor to the need for tracking the technical skills of his subordinates.
- Provide him with simple mechanisms to keep these records ("mental notebook" and Maintenance Qualification Chart).

- Give him a "rule of thumb" on how to make task assignments ("assign the task to a mechanic who must 'stretch' beyond his current ability").
- Provide a proper context for OJT ("set the scene for OJT").
- Provide a simple procedure for deciding at what level to give training and how much supervision to provide.

There are also some subtle aspects to the procedure. First, it introduces the notion of a "mental notebook," in which the supervisor is directed to maintain an evaluation of subordinates' ability to use TM's and tools, their general technical skills, motivation, and amount of supervision needed. Second, the supervisor is directed to define maintenance task context as one in which there are training roles (trainer and trainee), training is to occur, and the trainee is to ask questions. Third, a training tip, "The Value of Extended Practice," is introduced. Several of the studies reviewed and reported in TR 465-10[3] showed that performance improves with extended practice. This principle is applicable not only during task assignment, but also during the conduct of training itself.

Conduct OJT - Overview

This is the most lengthy and complex section of the guide. The supervisor's goal is defined as "to help the trainee learn task materials and maintenance procedures," and he is told to keep in mind that "you want the trainee to learn and be able to recall the materials and procedures you present." The concept of an "internal TM" is presented. The "internal TM" contains information concerning task materials and procedures. Experienced mechanics have an information-rich "internal TM," but new mechanics have an "internal TM" with "mostly blank pages." The supervisor's goal is to help the trainee fill in the "mostly blank pages" of the trainee's "internal TM" via OJT. The "internal TM" is a metaphor that underlies the conduct of OJT. The procedures and principles contained in this phase support the encoding of information concerning task materials and procedures for later recall. In other words, the trainee who is learning to perform a task during OJT is encoding the names and functions of various task materials (TM, test equipment, tools, repair parts); the steps in the maintenance procedure, their interrelationships, and their overall structure; the relationship between task materials and procedures; and is also developing motor skill in the application of task materials to

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[3]Op. cit.

each step of the maintenance task procedure. (The foregoing encompasses the behavioral element groups of **location, identification, recall, comparison, classification,** and **skilled performance** described in TR 465-10.)[4]

The "Conduct OJT" phase has three parts: preview, demonstration (by supervisor), and practice (by trainee). These three parts are somewhat redundant. Task materials and procedures are described in detail in the first part. During the second part, the supervisor performs the task. During the third part, the trainee performs the task. (In practice, Parts 2 and 3 will occur interactively, and the amount of actual work done by supervisor versus trainee will vary depending on trainee experience.)

In addition to the overall redundancy of the three parts, each part uses specific techniques to enhance effective encoding of information. In Part 1, for example, each item of the job materials is specifically identified, named (where appropriate), and its function is defined. The supervisor shows where replacement parts and QSS items go on the equipment, to put them in proper context. A training tip, "Helping Trainees Learn Task Materials," recommends that the supervisor tell the trainee that he must "attempt to learn" so that the trainee is primed for learning and hopefully will employ any innate learning strategies he has found effective in a learning situation. The supervisor then names each of the task materials and defines its purpose, and subsequently tests the trainee's knowledge of task materials by using paired learning techniques, such as combinations of item-name/function, name-item/function, and function-name/item tests. These techniques are also designed to facilitate greater "depth of processing" by requiring the trainee to analyze the function (i.e., purpose) of each item considered.[5]

A training tip, "Use the TM," emphasizes the importance of using the TM as a reference standard. The supervisor is directed to have the mechanic locate the portion of the TM covering the task, in the process evaluating the trainee's

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[4]Op. cit.

[5]Craik, F. I. M., & Tulving, E. Depth of processing and the retention of words in episodic memory. **Journal of Experimental Psychology: General,** 1975, 1, 268-294.

TM-using skills and teaching him to use the TM, if necessary. The supervisor then previews the task and relates it to the equipment. This sequence accomplishes a number of related objectives: facilitates acquisition of TM-using skills, provides task procedural overview ("advance organizer"), locates and identifies task materials, and relates the TM description to the actual equipment.

The supervisor demonstrates the task, using the TM as a reference to describe his step-by-step performance. He reinforces the item, name, and function relationships of task materials as he uses them by reiterating them at each performance step. At each step, he describes the purpose (function) of the step, performs it (obtaining as much trainee participation as possible), and relates the step to the one that came before and the one that comes after. A training tip, "Helping Trainees Learn Task Procedures," is included at this point in the guide to help the supervisor facilitate the trainee's own learning strategies and "depth of processing."

A training tip, "Helping Trainees Make Comparisons," is provided to give guidance in situations in which the trainee must use standards (e.g., measure clearances, check levels, torque in foot-pounds) to compare two objects.

The use of trainee hands-on practice is emphasized. A training tip, "Giving Feedback," emphasizes the importance of giving feedback, when to give it, and what type (i.e., concrete and specific) of feedback to give.

Follow Up on OJT - Overview

The Follow Up portion is straightforward. The supervisor reviews the trainee's performance on a step-by-step basis, identifies problems, and suggests how performance can be improved next time. This helps the trainee assess his performance and provides one final rehearsal of the task.

The last step of the procedure is for the supervisor to update his training records, i.e., the Maintenance Qualification Chart.

SUPERVISOR'S OJT GUIDE

INTRODUCTION

This guide was written for first-line supervisors such as yourself to help them conduct more effective OJT (on-the-job training). Anyone can be an effective trainer if he is technically skilled, motivated, and knows how to train. Knowing "how to train" means knowing correct **training procedures** and something about **training principles.** A training **procedure** is a set of steps you follow to train someone. A training **principle** is a technique to make training more effective. For example, one principle is that people learn better when they are told how they are performing (the "feedback" principle). This guide presents these procedures and principles in a form that you can use.

You must make the effort to learn these procedures and principles, and then apply them in your shop. There are several solid payoffs for your effort. What are they? Consider the following.

You will be a better trainer--The better you are as a trainer, the better you will be able to train your men. This means that they will learn more quickly, become productive sooner, and that it will take less time to train them. This benefits both you and the trainee.

Maintenance quality will improve--Trained, skilled mechanics do better work than mechanics who are untrained and unskilled. If you want a mechanic to do good work, then you must train him. Train him, motivate him, and he will perform quality work.

Unit readiness will improve--As you know, unit readiness depends on maintenance. If maintenance is poor, then readiness is low. Often, the reason for poor maintenance is lack of skill. So, if you train mechanics, their skill will increase, maintenance will improve, and unit readiness will increase.

WHAT IS OJT?

OJT means different things to different people. To many people, OJT means any work experience a mechanic receives on the job. Work experience is not really the same as training, however, and thinking of it as such is a mistake. On-the-job experience (OJE) is just that--**experience.** (We will have more to say about OJE later.)

What precisely, do we mean by **OJT**?

Our definition of OJT is **training that occurs outside formal schools, in the working environment, with the supervisor as trainer, on actual equipment, on work flowing through the shop.** The main difference between OJT and OJE is that during OJT you, the supervisor, **play an active role as a trainer.** This active role is reflected both in your **attitude** about training and in the way you **conduct** training.

First, your **attitude** should show as much concern for training as for getting the job done. In the typical Army maintenance shop, training comes second to turning out work. When you are under time pressure, this attitude is understandable. However, when time is available, you should use it to train your mechanics. Making use of this time is mainly a matter of **attitude.** It all boils down to wanting to train, seeking opportunities to train, and then seizing the opportunities and actually training.

The second part, **conducting** training, is the subject of this OJT guide. This guide presents OJT procedures and principles that will permit you to conduct effective OJT. These procedures and principles are not complicated, hard to learn, or hard to use. Good trainers use many of them already.

While procedures and principles are important, we cannot overemphasize the importance of **your attitude** about training. There is no way to make you an effective trainer unless you **want to train** your men, **look for opportunities,** and then go out there and **do it.**

OJE - WHAT IS GOOD AND BAD ABOUT IT

OJE is not the same as OJT.

OJE is fine for mechanics who have basic skills and are familiar with a task. All they need to develop these skills are more experience and some help from you. However, OJE is not helpful--and in fact may even be **harmful**--for someone who is inexperienced.

An inexperienced mechanic who attempts to do unfamiliar work can run into serious problems. First, he may do certain things incorrectly and, since no one is there to correct him, he may develop bad habits. Second, he may botch the job,

although it may not be immediately apparent. Third, he may run into roadblocks and become frustrated--this is bad for morale. Finally, he may figure that, since no one corrects his errors, quality doesn't count. In many ways, this is the most serious consequence because the mechanic develops an attitude that he will carry with him for the rest of his career--an attitude that equates to: "Nobody cares what kind of work I do and quality doesn't matter."

For reasons such as these, OJE is not good for the inexperienced mechanic. New mechanics need close supervision and careful **training on the job.**

THE "WHO," "WHAT," "WHERE," AND "WHEN" OF OJT

Who--You and your subordinate are the "who" of OJT. You are the trainer. He is the trainee. You may seek help from others if you need it, but you are the one responsible for training each mechanic who works for you. The trainee also has a responsibility. He must learn his job, develop his skills, and make his contribution to the maintenance team. Most mechanics understand these things without being told. If yours do not, then take them aside and explain the rules.

What--The "what" of OJT is learning to do maintenance while getting the repair job done at the same time. It is both of these things. OJT is different from learning common soldier skills, attending classes, talking about maintenance, holding a bull session, cleaning up the shop area, fetching tools, fetching parts, or performing first aid when someone is injured in the shop. While all of these activities are fairly common in the mechanic's daily routine (except accidents, we hope), none of them is OJT. OJT is what happens when the job is being performed--"hands-on" work with tools, technical manuals, and repair parts in which you and your mechanic fix something.

Where--The "where" of OJT is wherever the job is being performed. If you are in garrison, you conduct OJT in your shop. If you are in the field, you conduct it under canvas, under trees, or out in the dust, dirt, and mud. Obviously, it is easier to conduct OJT in some places than others. The main thing is to conduct OJT where you are doing the maintenance. Some folks use being in the field as an excuse for not conducting OJT. But often that is the best place to train. You may be under more pressure, but you have fewer distractions, the importance of your maintenance work to accomplishing the unit mission is obvious to everyone, and the maintenance team is able to perform its job under conditions similar to those in wartime. This makes the field a good place to train mechanics.

When--The "when" of OJT is during maintenance. That is, you train people using OJT on the job during the course of normal work. This is the big

advantage of OJT. It does not require anyone to set aside a classroom, prepare a lesson, visit the TASO (training aids support office) to find training aids, present a lecture, conduct a test, or take time away from work. All it takes is a maintenance supervisor, a mechanic, and a job. The amount of time available for training will depend on how pressed you are to finish the job. You must make this judgment. Sometimes you will be able to spend a lot of time training, and other times very little. But you somehow have to find or make the time necessary to train your men.

THE "HOW" OF OJT

The "how" of OJT has two parts: (1) OJT procedures, and (2) OJT principles.

OJT Procedures

OJT procedures cover the three phases of OJT: **Prepare, Conduct,** and **Follow Up.** Each phase is broken down into steps:

Preparing for OJT has steps to decide who needs training, assign the task, set the scene for OJT, and find out what the trainee knows about the task.

Conducting OJT has steps to preview the task, demonstrate the task, and give the trainee practice.

Following up on OJT has steps to evaluate trainee performance and update records.

These procedures are described in detail in the next section of this guide. The procedures are also summarized in the portable **"OJT Checklist"** which is in the pocket at the end of this guide. The checklist is designed to help you learn and apply these procedures. So, after you have studied this guide, take out the checklist and use it when you conduct OJT.

OJT Principles

OJT principles are techniques that make training more effective. They are based on the research findings of psychologists and educators. Some of these are built into the OJT procedures (which is an important reason to follow each step of the procedures). Other principles are more general and presented in boxes as "TRAINING TIPS."

PREPARE FOR OJT

There are four steps in preparing for OJT: Decide who needs training, assign the task, set the scene for OJT, and find out what the trainee knows about the task. These steps are the foundation for effective OJT. They are described in detail below. (The steps are summarized in the portable **"OJT Checklist".**)

1. DECIDE WHO NEEDS TRAINING

To train efficiently, you must know what tasks each mechanic needs training on. The Maintenance Qualification Chart (see below) will help you track the skill of your men. But you also must keep a "mental notebook" on each man. This "notebook" contains an evaluation of the man's ability to use TM's and tools, his general technical skills, his motivation, and the amount of supervision he needs. You keep such information in your head already, although you may need to sharpen it up. You will need the information in this "notebook" when it comes time to make task assignments.

Keep a **Maintenance Qualification Chart** (Figure 1). This will help you track the skill of your men. The chart lists names down the left side and tasks across the top. The number in each box shows how many times the mechanic has performed the task. If the mechanic is fully qualified to perform the task, then a "Q" appears in the box. ("Qualified" means that the mechanic is able to perform the task on his own, without supervision.)

The chart serves several purposes. First, it is a memory aid for you, and reduces the need for you to carry a lot of detailed information in your head. Second, it shows each mechanic where he stands, and where he needs to improve. Third, it provides a historical record that will be of value to your replacement. Finally, combined with the information in your "mental notebook," it will help you make task assignments.

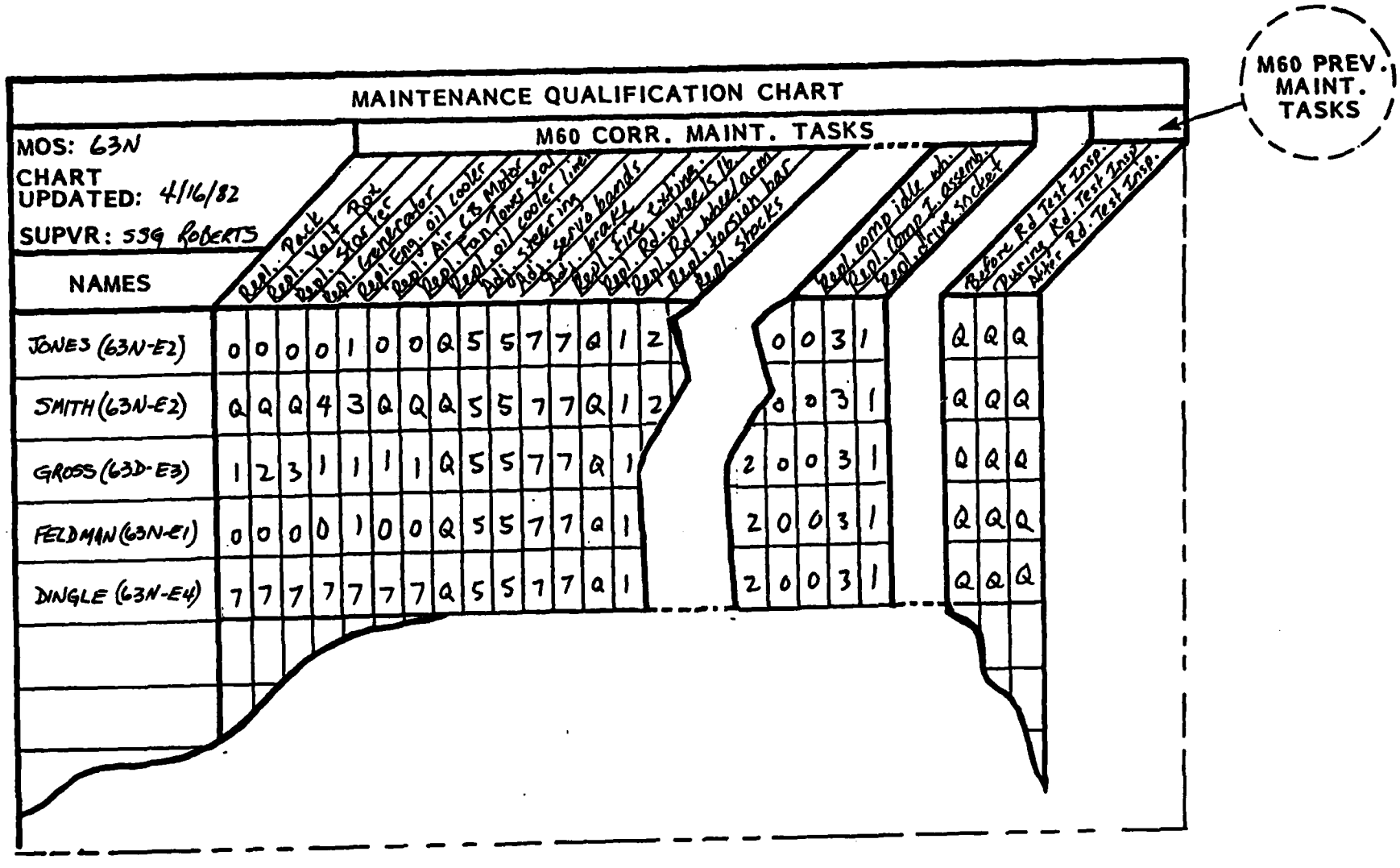

Figure 1. Maintenance Qualification Chart.

2. ASSIGN THE TASK

Each time a maintenance task comes into your shop, you must decide who will do it: You, another experienced mechanic, an inexperienced mechanic, or some combination of these personnel. To get the most training benefit, you must match the available mechanics to the task.

For training purposes, the ideal mechanic-task match is for the task to be slightly beyond the ability of the mechanic. If the task is too familiar, then the mechanic will learn little by performing it. If it is too advanced, the mechanic will be unable to relate it to his previous experience and will learn little. Get as close to the "ideal" mechanic-task match as you can. Assign the task to a mechanic who must "stretch" beyond his current ability.

Even if all of your mechanics are experienced on the task, they will still benefit from extended practice (see Training Tip #1).

TRAINING TIP #1
The Value of Extended Practice

The more we practice something, the better we become. The mechanic doing a task for the first time will not perform as well as the mechanic who has done that task 10 times. The reason for this difference is **practice.**

What happens after we do a task several times is that it becomes more or less **automatic.** At that point, we stop thinking about every movement we make and simply do the task. Even experienced mechanics can benefit from extended practice.

So when you must assign a task that all of your mechanics have experience on, make the best mechanic-task match you can. And realize that even the experienced mechanic will gain something by doing the task again.

3. SET THE SCENE FOR OJT

OJT differs from straight maintenance and has different ground rules. Tell mechanics these "ground rules" before you start.

Here are the rules:

- OJT is training.
- The main objective of OJT is for the **trainee** (mechanic) to learn to do maintenance.
- You are the **trainer** and he is the **trainee.**
- You will demonstrate the task, give him a chance to do it, and evaluate his performance.
- You will keep a record of his work on the Maintenance Qualification Chart (Figure 1).
- He should ask questions.

4. FIND OUT WHAT THE TRAINEE KNOWS ABOUT THE TASK

When you train, you must adjust the level of your training to the trainee. To do this, you must find out what he knows. You have a rough idea from your "mental notebook" on the man and from the Maintenance Qualification Chart. Refine this information by asking these questions:

- Has he done the task before? If so, how many times?
- Does he think he can do any steps of the task already?
- Has he done any similar tasks? If so, what are they? (You decide how similar the tasks are, and if they will help him on the new task.)

Evaluate the trainee's answers. Also consider the trainee's ability to use TM's and tools, his general technical skills on other maintenance tasks, his motivation, and the amount of supervision he needs.

Based on these factors, decide (1) what level to give your training at, and (2) how much supervision to give.

CONDUCT OJT

Conducting OJT has three parts: Preview the task, demonstrate the task, and give the trainee practice.

The steps that follow are designed to help the trainee learn task **materials** and **maintenance procedures.** As you follow these steps, keep in mind that **you want the trainee to learn and be able to recall** the materials and procedures you present.

Through training and experience, you have memorized a vast amount of technical information about the equipment you work on. Since you have built up your own "internal TM" gradually, over time, you probably do not fully appreciate how much it contains, or how much work it took to build it. The inexperienced mechanic has an "internal TM" with mostly blank pages. You must help him fill them in. Follow the procedure outlined below to accomplish that purpose.

The amount of supervision you provide during OJT should vary with trainee experience. An inexperienced trainee needs you there almost constantly to demonstrate the task, watch him perform, and give him feedback. Mistakes may occur if you are absent, so do not leave the training scene for long. The experienced trainee needs less training and supervision. You must still demonstrate the task, watch the trainee perform, and give feedback, but only for the difficult parts of the task. The experienced trainee can do the easy steps alone.

The steps in conducting OJT are described below. (These steps are summarized in the portable **"OJT Checklist."**)

1. PREVIEW THE TASK

Preview the task **before** you start. Identify the task **materials** that will be used, and go over the **maintenance procedures.** Experienced mechanics such as yourself may take these for granted, but **it is important to lay them out in all their detail for the new man.**

Start with **task materials.** These include the equipment you will fix and the TM, tools, test equipment, and repair parts you will use. The trainee will be unfamiliar with many of these materials. He must learn the **name** and **purpose** of each item.

Do the following:

- Show the trainee where the TM is located. Tell him why you chose that TM. Lay the TM out in the working space. Use of the TM is **very** important (see Training Tip #2).

- Lay out the tools and test equipment needed on the task. Point out and **name** each item. Tell what test equipment and special tools **will be used for** (see Training Tip #3).

- Get replacement parts and QSS items needed on the task. Point out and **name** each item. Then go to the equipment and **show where the replacement part or item will go** (see Training Tip #3).

TRAINING TIP #2
Use the TM

Using the TM is especially important for the new man. His "internal TM" has many gaps. If he attempts maintenance without the TM, he will make mistakes, do damage, and perhaps botch the job. So keep him on the right track.

Tell the mechanic that it is **important** for him to use the TM.

Show that you mean it--**always use the TM yourself.**

Doing a good job as a mechanic depends on finding, using, and remembering information. Much of this information is contained in TMs. To do a task correctly, you need the right TM. You must know **which TM** to get, **where to find it**, and **how to locate the information** you want. Doing these things is a **skill**, and **takes practice**-- just like turning wrenches. Mechanics must be taught this skill, if they do not have it already. So do not take the TM for granted. Find out if your mechanics can use it. If not, teach them.

TRAINING TIP #3

Helping Trainees Learn Task Materials

Here are some ways to help a trainee learn the name and purpose of task materials.

First, tell the trainee that **he must attempt to learn.**

Point out each item (tool, test equipment, part) and tell its **name** and **purpose.**

Test the trainee's knowledge. After you have told him the name and purpose of several items, ask some questions:

- **Point out some items,** one at a time. Ask the trainee each item's name and purpose.
- **Give the names** of some items. Ask the trainee to point out each item and tell its purpose.
- **Describe** what one or two important items (for example, special tools) **do.** Ask the trainee to point out and name the items.

Don't test the trainee on everything. Just pick key items. Make sure the trainee can name and tell the purpose of the most important items--repair parts and special tools. If he has difficulty, keep going over the items until he learns them.

Now preview the **maintenance procedures.**

Do the following:

- Tell the trainee to open the TM to the place covering the task you will do. If he can't, open the TM to the Table of Contents, locate the page number for the topics that cover the task, and tell the trainee to open the TM to the appropriate page.
- Locate the beginning and the end of the maintenance task description in the TM. With the trainee looking on, briefly go through the maintenance procedures as described in the TM. Do not read every word in the TM. Just give an overview. Read aloud difficult steps, summarize others in your own words, and refer to the diagrams.

- Go to the equipment. Point out and name the portions of the equipment you will work on, and relate them back to the TM. Describe the task in a general, step-by-step way, so that the trainee gets an **overview** of the task.

- Ask the trainee a few questions to test his knowledge of the maintenance procedure. Do not expect him to understand every detail. He should know (1) safety precautions, (2) how to start the task, (3) general procedure to follow, and (4) how to check that the task was properly performed.

- Ask the trainee if he has questions on what you've covered so far. If he does, take a few minutes and answer them. Do not get into a lot of specific details. That will come later, when you demonstrate the task. The purpose of the preview is to give the trainee an overview.

2. DEMONSTRATE THE TASK

In preparing for OJT, and during the preview, you found out how much the trainee knew about the task. Now you must adjust the level of your demonstration to suit his needs. If he knows nothing, your demonstration should be slow, detailed, and cover every step of the procedure. If he is very experienced, then your demonstration should concentrate on the **difficult** steps of the procedure. Most trainees are somewhere between these extremes, which means that they have some familiarity with the task, but not enough to be left on their own. Decide what they need, and adjust the level of your demonstration accordingly.

Demonstrate each step of the maintenance task, following the procedure given below. Then give the trainee **practice** on the step. In other words, **alternate between your demonstration and his practice.**

Do the following:

- Keep the TM open and use it. Relate what you are doing to the TM. Make the trainee conscious that the TM is the authority for how the maintenance task is performed.

- Tell him the purpose of the step. For example, say, "This step is to remove the cotter pin."

- Identify and name the tools and test equipment required to perform the step. For example, say, "This step requires a 5/8" socket with a short extension."

- If a repair part is used during the step, name the part, tell what it does, and explain how it will be installed before actually installing it.

- Use the tool or item of test equipment to perform the required maintenance action. **If possible, have the trainee perform the actual work.**

  (Some tasks require **comparisons** to be made. A comparison is when you relate two things together and match them. For example, measuring the clearance of a fan in its housing requires comparison of the thickness of a feeler gauge strip with the space between the fan blades and the housing. Training Tip #4 tells how to help trainees make comparisons.)

- Keep the task in perspective. When you start demonstrating a step, explain how it relates to what came before. When you finish it, explain how it relates to what comes next (see Training Tip #5).

The above are the things that **you** must do. Your demonstration provides the information the trainee needs to do the job himself. However, **he will learn very little unless he participates.** Keep this always in mind. The following are some ways to make the trainee participate:

- **Ask for the trainee's help.** If you need a tool or repair part, ask the trainee to give it to you. This not only helps you, but it tests his knowledge of task materials, and helps build his memory for them.

- **Ask questions.** You previewed the task for the trainee before you started it. Therefore, the trainee should understand what is going on. Test his knowledge. Make him **think.**

- **Let the trainee perform.** Don't do all the work yourself. Let the trainee do it. That is how he will learn. Let him test the circuit, remove the nut, or perform the physical action required. **This is the single most important part of OJT.**

TRAINING TIP #4

Helping Trainees Make Comparisons

Here are some ways to help trainees make comparisons.

Comparisons are made by relating **key features** of two things. Tell the trainee what these features are. Put the two items to be compared together, side by side. Then compare them point-by-point.

Tell him how much **tolerance** is allowed in making the comparison. For example, if a comparison is made with a machinist's scale, tell him the acceptable standard (for example, "plus or minus $\frac{1}{2}$).

To become skilled at making comparisons, the trainee must make several. If possible, set up a training situation that permits this to happen. For example, if you are checking to see if brake shoes are worn, bring in several sets, showing different amounts of wear. Let the trainee decide which set represents the amount of wear calling for replacement.

TRAINING TIP #5

Helping Trainees Learn Task Procedures

Here are some ways to help trainees learn task procedures.

First, tell the trainee that **he must attempt to learn the procedure.**

Each time you demonstrate a step, do the following:

- **Describe** the step.
- **Relate** the step to the step that came before and the step that comes after.

Test the trainee's knowledge. Ask questions that make him **think.** For example:

- "Why are we doing this?"
- "What comes next?"
- "What else must we do to finish this step?"

3. GIVE THE TRAINEE PRACTICE

You adjusted the level of your demonstration to suit the trainee's needs. Also adjust his "hands-on" practice to suit his needs.

If the trainee was inexperienced, your demonstration was slow, detailed, and covered every step of the procedure. Hands-on practice should follow a similar pattern. After demonstrating each step of the task, let the trainee perform. Monitor what he does very closely. Provide feedback as needed (see Training Tip #6).

If the mechanic was experienced, your demonstration concentrated on the difficult steps of the procedure. Hands-on practice should follow a similar pattern. Monitor trainee performance closely on the steps you demonstrated. Let the trainee perform on his own the parts of the task that he is familiar with. Provide feedback as needed (see Training Tip #6).

TRAINING TIP #6

Giving Feedback

"Feedback" is the information you give to tell someone how well he is doing. This is probably the **single most important training principle.** People who are learning a new maintenance task are not very good at evaluating their own performance. Someone must be there to tell them what they are doing right and wrong. Mistakes will then be promptly corrected and learning will occur.

Here are some things to know about feedback.

Feedback is what you tell a trainee **after** he has done something. The trainee will learn very little if you prompt his every action and give him no opportunity to think independently. Let him try--and within limits make errors --before you correct him.

Make feedback brief and specific. If the trainee makes an error, tell him **what** he did wrong and **how** to do it right. Then let him do it again. (Check that he does it correctly.)

Provide the **right amount** of feedback. If you give too little, the trainee will be uncertain how well he is doing. If you give too much, the trainee may get the impression that you have no confidence in him and think he is incompetent.

Do not be judgmental. Avoid the use of emotion-laden terms such as profanity. These interfere with learning and are often counter-productive.

FOLLOW UP ON OJT

Following up on OJT is what you and the trainee do after the hands-on work is done. There are two steps in following up on OJT: Evaluate performance, and update records. These steps are simple, and require much less time than the earlier steps in OJT. These steps are described below. (The steps are summarized in the portable "OJT Checklist.")

1. EVALUATE PERFORMANCE

When the maintenance task is finished, sit down with the trainee and evaluate his performance. This overall feedback should be given **immediately** after finishing the task. Although the mechanic received feedback while doing the task, he still might not know how "well" he did or where his strengths and weaknesses lie. You will know, based on your experience. Do the following:

- Discuss the task, step by step.
- Identify the steps the trainee performed well.
- Point out problems that were encountered.
- Identify the steps the trainee performed poorly. Tell him **why** he performed poorly. Tell him **what to do** to improve his performance next time.

When you finish the review, summarize the trainee's performance in a single statement, such as one of the following:

"You need much more practice on this task."

"I rate you at about 50% on this task--some steps right, some steps wrong. You still need a lot of practice."

"I rate you at about 75% on this task--most of the steps right, some wrong. You're almost there."

"You performed very well on this task. From now on I will let you do it on your own."

Keep the evaluation impersonal. Talk about the **task**, and what the **trainee did** correctly and incorrectly. Don't talk about the trainee. Do not accuse the trainee of being "careless," "stupid," "sloppy," or other vague, insulting terms. He

may, indeed, have shown such traits during the task, but probably was unaware of it. If you use insulting language, the trainee is liable to "tune you out" and ignore the suggestions you make to help him improve his performance. Talk about what he **did** that was careless, stupid, or sloppy that he should not have done. And remind him not to do it next time.

2. UPDATE RECORDS

Update the Maintenance Qualification Chart (Figure 1) based on OJT. Two types of entries may be made on this chart:

- An additional task "credit" may be given if the trainee was able to do satisfactory "hands-on" work on at least 50% of the task steps.
- You may "qualify" the trainee on the task if, based on the trainee's performance, you are confident that he can perform the job **without supervision.**

In most cases, you should give the trainee an additional credit by increasing the number of credits opposite his name for the task by one. For example, if the trainee has four credits opposite his name for "Replace Power Pack," following training he should receive one additional credit, raising the total to five. Once in a while, a trainee may qualify on a task following training. Remember, when you qualify a man on a task, you are saying that he is **able to perform the task, on his own, without supervision.** Qualification should not be treated lightly. Thus, the only time a mechanic should become qualified following training is if he already has considerable experience on the task and the training only covered the few additional points needed to make him an **expert.**

OJT CHECKLIST

PREPARE FOR OJT

☐ **DECIDE WHO NEEDS TRAINING**

- Keep "mental notebook" on mechanics
- Keep Maintenance Qualification Chart

☐ **ASSIGN THE TASK**

- Make mechanic "stretch" beyond current ability

> **TRAINING TIP #1:**
> Extended practice is valuable, even for experienced mechanics.

☐ **SET THE SCENE FOR OJT**

- Give ground rules for OJT
- Trainee should ask questions

☐ **FIND OUT WHAT THE TRAINEE KNOWS ABOUT THE TASK**

- Has he done same or similar tasks already?
- Can he use TM's and Tools?
- What is his technical skill?
- Is he motivated?
- How much supervision does he need?
- Decide (1) level of training, (2) amount of supervision to give

FOLLOW UP ON OJT

☐ **EVALUATE PERFORMANCE**

- Discuss each step of task
- Identify steps performed well
- Identify steps performed poorly
  - Tell why performed poorly
  - Tell what to do next time
- Rate overall performance

☐ **UPDATE RECORDS**

- Additional credit on Maintenance Qualification Chart for satisfactory work on 50% of task steps
- "Qualify" trainee if he can do task unsupervised

CONDUCT OJT

☐ **PREVIEW THE TASK**

- Obtain TM

TRAINING TIP #2: Always Use the TM

- Tools and test equipment
  - Lay out items
  - Name the items
  - Explain the use of each item
- Parts and QSS items
  - Name the items
  - Show where each item goes on equipment

TRAINING TIP #3: Learning Task Materials

- Trainee must attempt to learn
- Give name and purpose of items
- Test his knowledge of name and purpose of selected items

- Find task description in TM
- Relate task description to equipment

☐ **DEMONSTRATE THE TASK**

- Relate demonstration to TM description
- Tell purpose of each step
- Identify and name tools and test equipment used
- Identify, name, and tell purpose of repair part used
- Perform step
  - Get trainee's help
  - Ask questions
  - Let trainee perform

TRAINING TIP #4: Making Comparisons

- Identify key features
- Tell amount of tolerance
- Make point-by-point comparison

TRAINING TIP #5: Learning Task Procedures

- Trainee must attempt to learn
- Describe each step
- Relate to previous and next step
- Test trainee's knowledge

☐ **GIVE THE TRAINEE PRACTICE**

- Monitor practice as necessary
- Give feedback